

DYTISCUS PICEUS.



CHARACTER GENERICUS.

Antennæ fetacæ, aut clavato-perfoliatæ.

Pedes postici villosi, natatorii, submutici.

Lin. Syst. Nat. p. 664.

CHARACTER SPECIFICUS, &c.

DYTISCUS niger nitidus, antennis perfoliatis,
sterno postice mucronato.

DYTISCUS antennis perfoliatis, corpore lævi,
sterno carinato, postice mucronato.

Lin. Syst. Nat. p. 664.

HYDROPHILUS ruficornis.

Degeer. 4. p. 371. t. 14. f. 1. 2.

DYTISCUS hastatus.

Herbst. Besch. der naturf. Berl. Fr.

4. t. 7. f. 2.

HYDROPHILUS niger, &c.

Geoffr. inf. Par. 1. p. 182. t. 3. f. 1.

SCARABEE, &c.

Lyonet Less. t. 2. p. 54. n. 110. t. 1.

f. 15—17.

Omnium qui in Britannia generantur maximus est
Dytiscus piceus. A cæteris facillime dignoscitur,
quippe

quippe qui totus nigerrimus thoracem inferiorem solus gerat mucronatum; quod non nisi paucis exoticis contingit, nulli præter hunc Britannico. Aliæ licet species magis abundant, hujus tamen nulla est penuria. Piscinas amat aquasque stagnantes, larvæque ejus ut et aliorum Dytiscorum atrocissime prædatur teneriora infecta, nec non vermes et pisciculos, quos oris forcipibus correptos sugendo enecat. Hujus aliorumque majorum Dytiscorum juniores ab antiquioribus physicis nomine *Squillarum aquaticarum* describi soliti sunt; esse enim eos revera larvas tunc temporis ignorabant. Licet inter larvas diversarum specierum maxima sit similitudo, hujus tamen cæteris major sibi peculiare quiddam habet et anomalum, cui vix simile in aliis animalibus invenias: crura nempe, ni penitus examinentur, non ut aliorum insectorum, sub thorace sita videntur, sed supra, indeque ad latera deflecti. Crura autem non revera dorso inferuntur, sed oritur deceptio a peculiari quadam conformatione situque capitis; augetque deceptionem larvæ tum natantis tum quiescentis inversa plerumque positio; adeo ut difficile sit vel exercitatissimo physico errorem semel conceptum ex animo excutere. Frischius in historia insectorum ne minimum dubitasse videtur crura reapse esse dorso inserta: et celeberrimus Reaumurius cum huic simile aliquod in alio insecto aquatico observasset, attonitus rei novitate phænomenon unicum nec alibi uspiam conspectum commemoravit. Auctor quoque quarti voluminis Sebæ Thesauri lectores sedulo admonet, sculptorem corrigere volentem quod falso et inscite delinatum putavit, pedes hujus larvæ non supra thoracem

thoracem sed subtus depinxisse. Lyonettus autem, multo vir acumine, in notas quas adjecit libro Lefseri, cui titulus "Theologie des Insectes," errorem vulgarem primus videtur detexisse, et veram larvæ conformationem luculenter descripsisse.

Dytiscorum larvæ non nisi post duos? circiter annos in pupas seu chrysalidas transformantur: cum enim ad plenam magnitudinem pervenerint, in cavo aliquo ripæ latibulo torpidæ aliquandiu dormiunt; deinde cutim exuunt et chrysalides fiunt. Elapso certo tempore, iterum exuviæ abjiciuntur, ipseque Dytiscus jam plene formatus erumpit; qui chrysalidis cute primum deposita, tenerrimus est et coloris pallidi; paucis vero horis elytra seu alarum tegumenta satis indurantur, colore gradatim magis magisque fusco donec penitus nigraverit; et tum demum insectum novâ gaudens forma, nec alias ulla vices subiturum, aquis se audacter concredit.

Mares Dytiscos distinguit a feminis crurum anteriorum diversitas, quæ juxta pedum insitionem concava quadam cornea et rotundata parte velut clypeolo instruuntur, quo profus carent crura feminea. Toti generi peculiaris est et miranda crurum posteriorum formatio, quorum latera interiora serie pilorum longorum et densorum obsita sunt, pinnas quodammodo referentium; quibus magnopere in natando adjuvantur. Notandum porro est Dytiscum feminam speciei jam depictæ exemplum præbere artis, aliis (ut videtur) insectis coleoptratis penitus incognitæ; telam nempe nendi complanatam, circularem, sericam, quam super aquas libere fluitantem relinquit, ibique ova sua deponit; cujusque
super-

superficies superior cornu in formam quasi conii crescente terminatur, longo, fusco, et densiori ipsa theca, quæ albet. Larvæ ut primum a thecæ carcere liberantur, aquis se illico credunt. Quod mirum in historia Dytisci primus notavit Dominus Lyonettus.

Cavendum est putemus Dytiscos non posse sub dio vivere; frequenter enim per prata vagantur, in hanc vel illam aquam ad libitum se recipientes: quod cum noctu præcipue fiat, non mirum est si ignoretur. Si incaute ex aquis nuda manu excipiat Dytiscus piccus, eo est robore ut cutim mucrone thoracico interdum luctando vulneret.



THE
GREAT DYTISCUS.



GENERIC CHARACTER.

Antennæ either setaceous or clavato-perfoliate.
Hind Feet formed for swimming, villose on the interior side, and scarce perceptibly clawed.

SPECIFIC CHARACTER, &c.

Glossy-black DYTISCUS, with perfoliate antennæ and long thoracic spine pointing backwards.

The large Black WATER-BEETLE,

The Spiked WATER-CLOCK.

Grew. Mus. p. 170.

The insect here figured is the largest of all the British Dytisci, and is at once distinguished by its uniform blackness, and by the remarkable spine or process proceeding from the lower part of the thorax; and which, though occurring in some exotic Dytisci, is found in no other British species. It is not a very uncommon animal, though far more so than some others of the genus. It is found in ponds and stagnant waters; where its larva, like those of other

other species, commits great havoc amongst the more tender aquatic insects, as well as amongst worms and young fish, which it seizes with its forcipated jaws, and destroys by sucking out their juices. The larvæ of the larger Dytisci were described by the older writers on natural history under the title of *Squillæ aquaticæ*; and were not at that time known to be Dytisci in their first or caterpillar state. There is a great similarity between the larvæ of the different Dytisci; but that of the present species is distinguished by a particularity so very remarkable as scarce to be equalled by any other creature. This consists in the apparently anomalous situation of the legs; which seem, unless very accurately examined, to be placed, not beneath the thorax, as in other insects, but on the upper part, and from thence to be deflected towards the sides. This uncommon appearance however is not owing to a real dorsal instead of ventral insertion of the legs, but principally to the peculiar shape and position of the head; and the deception is so much heightened by the inverted posture in which the insect generally swims and rests, that it is by no means easy even for the most scientific observer to divest himself of the erroneous idea before mentioned. Frisch, in his History of Insects, appears to have been completely convinced of the real dorsal insertion of the legs; and the celebrated Reaumur, having discovered something similar in another aquatic insect, was so struck with the unusual appearance, that he has commemorated it as a circumstance unparalleled in the animal world. The author of
the

the fourth volume of Seba's *Thefaurus* was of the same opinion, and expressly warns his readers that his engraver, thinking to rectify what he supposed an erroneous drawing, has represented the legs in this larva as situated beneath the thorax, and not on the upper part. The sagacious Lyonett, in his observations on Leffer's "*Theologie des Insectes*," seems to have been the first who detected the common error, and ascertained the real structure of the animal, which he has clearly and satisfactorily explained.

The larvæ of the *Dytisci* remain about two? years before they change into pupæ or chrysalides. When the larva is arrived at its full growth, it secretes itself in the bank of the water it inhabits, and having formed a convenient cavity or cell, lies dormant for some time; after which it divests itself of its skin, and appears in the form of a chrysalis; in which state having continued for some time longer, it again delivers itself from its exuvix, and appears in its complete or Beetle form. When first disengaged from the skin of the chrysalis, it is of a pale color, and very tender: in the space however of a few hours, the elytra or wing-cases acquire a degree of strength and a dark color, which gradually grows more and more intense, till the animal, finding itself sufficiently strong, comes forth from its retreat, and commits itself in its new form to the waters.

The male *Dytisci* are distinguished from the females by the structure of the fore legs, which are furnished, near the setting on of the feet, with a sort of horny, concave flap or shield: the legs of the

females are destitute of this part. The structure of the hind legs, in the whole genus *Dytiscus* is singularly curious, and finely calculated for their aquatic mode of life; being furnished on the interior side with a series of long and close-set filaments, so as to give a sort of finny appearance to the legs, and to enable the animal to swim with the greatest ease and celerity. It may be added that the female of the *Dytiscus piceus* affords an example of a faculty which seems to be exercised by no other coleopterous insects; viz. that of spinning a kind of web or flattish, circular case of silk, which it leaves floating on the surface of the water, and in which it deposits its eggs: this case is terminated on its upper surface by a lengthened, conical process resembling a horn; of a brown color, and of a much stronger or denser nature than the case itself, which is white. The young larvæ, as soon as hatched, make their escape from the envelopement of the case, and commit themselves to the water. This curious particular in the history of the *Dytiscus piceus* was first discovered by Lyonett.

It is not to be imagined that because the *Dytisci* are so generally seen in the water, they are therefore incapable of living in air: on the contrary, they sometimes emerge, and fly about the fields, and thus migrate from water to water: but as this happens chiefly by night, it is not generally observed.

The *Dytiscus piceus* is an insect of great strength, and if incautiously handled when taken out of the water, will struggle in the hand with so much force as sometimes to wound the skin with its thoracic spine.